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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional)
		SCS-550-513
Application Number	Filed	
10/781,867	February 20, 2004	
First Named Inventor	NEVILL	
Art Unit	Examiner	
2188	M. McFadden	
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the <input type="checkbox"/> Applicant/Inventor <input type="checkbox"/> Assignee of record of the entire interest. See 37 C.F.R. § 3.71. Statement under 37 C.F.R. § 3.73(b) is enclosed. (Form PTO/SB/96) <input checked="" type="checkbox"/> Attorney or agent of record <u>27,393</u> (Reg. No.) <input type="checkbox"/> Attorney or agent acting under 37CFR 1.34. Registration number if acting under 37 C.F.R. § 1.34 _____</p> <p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.*</p> <p><input checked="" type="checkbox"/> *Total of 1 form/s are submitted.</p>		



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January 22, 2007

Date

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**STATEMENT OF ARGUMENTS IN SUPPORT OF
PRE-APPEAL BRIEF REQUEST FOR REVIEW**

The following listing of clear errors in the Examiner's rejection and his failure to identify essential elements necessary for a *prima facie* basis of rejection is responsive to the Final Official Action mailed October 20, 2006 (Paper No. 20061011).

Error #1. Neither Wilson nor any other prior art reference discloses "suspending an actual execution path of said processing task at an execution point"

The Court of Appeals for the Federal Circuit has noted in the case of *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984) that "[a]nticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim."

Each of Applicant's independent claims 1, 11 and 21 recite "suspending an actual execution path of said processing task at an execution point to perform memory management." (emphasis added). Independent claims 31-33 are directed to a method of identifying at least one data item root at "said execution point." (emphasis added). Therefore, in order to anticipate the subject matter of Applicant's independent claims 1, 11, 21 and 31-33, the burden is on the Examiner to establish where Wilson or at least one reference discloses the computer program product or apparatus for "suspending" an execution path of the processing task.

As pointed out in Applicant's Amendment filed July 27, 2006 (page 19, second and third paragraphs), the Wilson reference is an example of the "mark-sweep" technique well known in the prior art (as discussed in Applicant's specification, page 4, lines 19-23). As pointed out in the first paragraph on page 20 of Applicant's previously filed Amendment, there is no indication in Wilson

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or any other cited reference of record which discloses suspension of an actual execution path of said processing task.

The Examiner apparently concurs in this analysis (and admits that Wilson fails to teach this claimed element) because his only response is to argue that "it is known to one of skill in the art that garbage collection occurs at a point in an execution path where execution is suspended in order to perform garbage collection." (Final Rejection, page 9, lines 1-3). However, the Examiner has identified no teaching in Wilson, nor any other prior art, supporting his contention. The Manual of Patent Examining Procedure (MPEP) Section 2144.03 specifies that where "the applicant traverses such an assertion the examiner should cite a reference in support of his or her position." Applicant's previous Amendment, the first full paragraph on page 20, clearly traverses the Examiner's assertion that Wilson teaches any suspension of execution. Yet, the Examiner has cited no other reference in support of his position that it is known to conduct garbage collection during a processing task.

It should be understood that the Wilson reference merely discloses the first stage of operation of the known "mark-sweep" garbage collectors, which involves distinguishing the live objects from the garbage by marking objects that can be traced starting a root set. Wilson (and other known methods) perform memory management operations at the bytecode-verification stage, prior to execution of the processing task. Applicant's claimed invention clearly does not operate prior to execution of the processing task and rather suspends the processing task at an execution point.

Because neither Wilson, nor any other cited prior art, teaches any such processing task "suspension" step and therefore Wilson cannot anticipate independent claims 1, 11 and 21 and claims dependent thereon and thus any further rejection under 35 USC §§102 or 103 is respectfully traversed.

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Error #2. Since Wilson does not teach suspension of the processing task, he cannot teach the method step of "identifying at least one data item roots occurring in the course of execution and accessible to said processing task at said execution point"

As noted above, Wilson operates prior to execution of the processing task and therefore cannot teach the third "identifying" step in Applicant's independent claims 1, 11 and 21 which recites "occurring in the course of execution" (emphasis added). Independent claims 31-33 go into the details of this "identifying" step, but clearly Wilson does not teach such detail because it does not teach any suspension during the processing task. Again, Wilson teaches only a mark-sweep garbage collection which steps occur prior to execution of the processing task.

The failure of Wilson or any other cited reference in teaching the "identifying" step clearly indicates that the rejections under §§102 and 103 are improper.

Error #3. Wilson does not teach Applicant's claimed "determining a correlation . . . by identifying at least one data item reachable from said at least one data item roots"

Wilson does not teach "suspending" or "identifying" data item roots "in the course of execution" and therefore cannot determine any correlation between reference values "up to said execution point." The Examiner has identified no portion of the Wilson reference which teaches or suggests the "determining" step in claims 1, 11 and 21. Therefore, Wilson fails to meet the requirements of 35 USC §§102 and 103 by failing to teach all claimed method steps, computer logic or apparatus elements in one or more references.

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Error #4. Applicant's independent claims also require the performance of "a memory management operation on allocated memory areas in dependence upon said correlation"

Because the correlation is obtained during suspension of processing (at the claimed "execution point"), it cannot possibly be disclosed or suggested by the Wilson reference. Wilson's failure to teach this claimed step, logic or element renders unsupported the §§102 and 103 rejections.

Error #5. The Wilson reference clearly leads one of ordinary skill in the art away from Applicant's claimed invention

As noted above and in the previous Amendment, because Wilson clearly teaches the "mark-sweep" type garbage collector, it leads those of ordinary skill in the art to perform management operations at the bytecode-verification stage, i.e., prior to execution of the processing task. As noted in Applicant's specification, there are numerous benefits in the present invention by beginning the processing task and then suspending the execution path and tracing the data items reachable from the roots. The advantages are that this system is less memory-intensive and less processor-intensive than the known mark-sweep garbage collection techniques such as Wilson. This is because identification of objects for garbage collection starting from the roots is performed post verification (of the bytecode) and after execution of the processing task has commenced, but only as and when required at the point at which garbage collection is initiated. This is differentiated from known garbage collection techniques that rely upon analysis of large volumes of previously stored information, the collection of which slows down execution of the program (see Applicant's specification, page 5, line 25 to page 6, line 6). The present

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invention enables objects for garbage collection to be identified dynamically at the point in execution of the program at which garbage collection is in fact initiated.

Thus, because Wilson clearly teaches preprocessing task garbage collection, it would lead one of ordinary skill in the art away from Applicant claimed invention during processing and therefore not only can it not anticipate or render obvious Applicant's independent claims 1, 11, 21 and 31-33, but it would lead one of ordinary skill in the art away from such claims.

SUMMARY

As noted in detail above, the Wilson reference fails to teach Applicant's independent claims 1, 11 and 21 (and claims dependent thereon) steps of "suspending," "identifying," "determining" and "performing a memory management operation." As noted above, Wilson fails to disclose the details of the "identifying" step during a processing task at an execution point as set out in independent claims 31-33. Moreover, it has clearly been demonstrated that Wilson teaches garbage management operations prior to execution of the processing task which is the direct opposite of Applicant's management operation during a processing task. Notwithstanding the Examiner's completely unsupported allegation that the claimed invention is known to one of ordinary skill in the art, he has cited no reference and provided no evidence in support of his conclusion.

As a result of the above, there is simply no support for the rejection of Applicant's independent claims 1, 11, 21 and 31-33 or claims dependent thereon under 35 USC §102 or §103. Applicant respectfully requests that the Pre-Appeal Panel find that the application is allowed on the existing claims and prosecution on the merits should be closed.